

## Devicenet® I/O MODULE

(NPN discrete input, 32 points, MIL connector)

MODEL **R7F4HD-DA32A**

### BEFORE USE ....

Thank you for choosing us. Before use, please check contents of the package you received as outlined below.

If you have any problems or questions with the product, please contact our sales office or representatives.

#### ■ PACKAGE INCLUDES:

Discrete input module.....(1)  
DIN rail mounter slider.....(2)

#### ■ MODEL NO.

Confirm Model No. marking on the product to be exactly what you ordered.

#### ■ INSTRUCTION MANUAL

This manual describes necessary points of caution when you use this product, including installation, connection and basic maintenance procedures.

#### ■ EDS FILE

EDS files are downloadable at our web site.

### POINTS OF CAUTION

#### ■ CONFORMITY WITH EU DIRECTIVES

- The equipment must be mounted inside the instrument panel of a metal enclosure.
- The actual installation environments such as panel configurations, connected devices, connected wires, may affect the protection level of this unit when it is integrated in a panel system. The user may have to review the CE requirements in regard to the whole system and employ additional protective measures\* to ensure the CE conformity.

\* For example, installation of noise filters and clamp filters for the power source, input and output connected to the unit, etc.

#### ■ GENERAL PRECAUTIONS

- Before you remove the unit or mount it, turn off the power supply and input signal for safety.
- Before you remove the terminal block or mount it, make sure to turn off the power supply and input signal for safety.
- DO NOT set the switches on the module while the power is supplied. The switches are used only for maintenance without the power.

#### ■ ENVIRONMENT

- Indoor use.
- When heavy dust or metal particles are present in the air, install the unit inside proper housing with sufficient ventilation.
- Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within -10 to +55°C (14 to 131°F) with relative humidity within 30 to 90% RH in order to ensure adequate life span and operation.
- Observe at the minimum of 10 mm left and right the units for heat dissipation when mounting vertically.

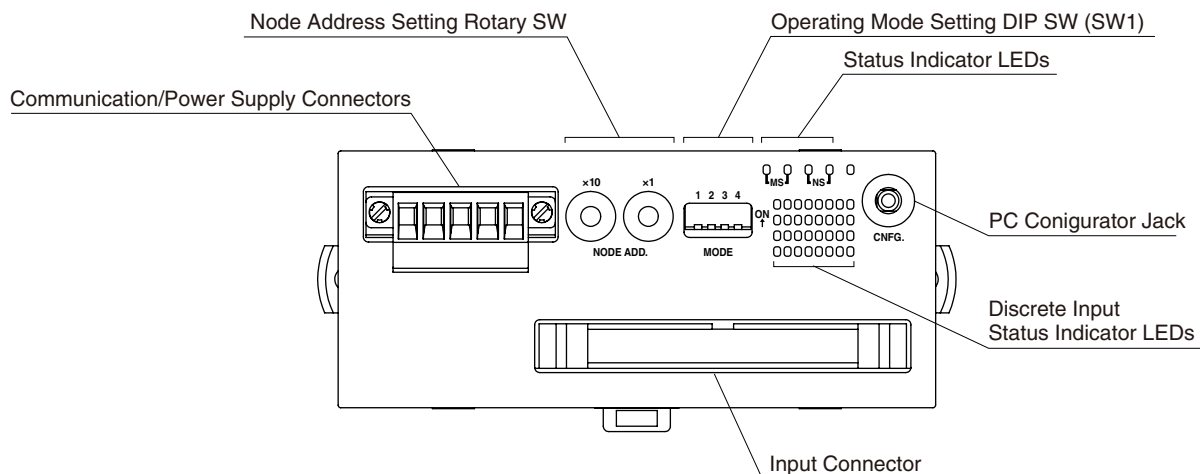
#### ■ WIRING

- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.
- Be sure to close the terminal cover for safety.

#### ■ AND ....

- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

## COMPONENT IDENTIFICATION



### ■ STATUS INDICATOR LED

ID	STATUS	COLOR	FUNCTION
MS	ON	Green	Normal operation
	Blinking	Green	Not set
	ON	Red	Critical failure
	Blinking	Red	Minor failure
	OFF	–	No power supply
NS	ON	Green	Connections are established
	Blinking	Green	Connections are not established
	ON	Red	Critical Link failure
	Blinking	Red	Minor Link failure
	OFF	–	No power supply

### ■ DISCRETE INPUT STATUS INDICATOR LED

LED green indicators shows the signal status.

ON : LED ON

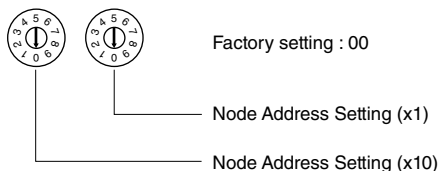
OFF : LED OFF

### ■ NODE ADDRESS

The left switch determines the tenth place digit, while the right switch does the ones place digit of the address.

Address is selected between 0 to 63.

(Factory setting: 00)



### ■ OPERATION MODE

(\*) Factory default setting

#### • BAUD RATE (SW1-1, 2)

Baud Rate is selected with the rotary switch.

BAUD RATE	SW1	
	1	2
125 kbps	OFF	OFF
250 kbps	ON	OFF
500 kbps	OFF	ON
Auto-tracking (*)	ON	ON

#### • STATUS DATA (SW1-3)

STATUS DATA	SW1
	3
Disable	OFF
Enable	ON

Note 1: The R7F4HD communicates in the baud rate setting detected at the startup with the switch set to the positions 0 (125 kbps), 1 (250 kbps) or 2 (500 kbps).

For the settings auto-tracking, it analyzes the PLC's network to determine the baud rate on the network.

Note 2: Be sure to set unused SW1-4 to OFF.

## ■ TERMINAL ASSIGNMENT

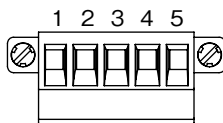
### • Communication/power supply Terminal Assignment

Unit side connector: MSTB2,5/5-GF-5,08AU (Phoenix Contact)

Cable side connector: MSTB2,5/5-STF-5,08AU (Phoenix Contact)

Applicable wire size: 0.2 - 2.5mm<sup>2</sup>

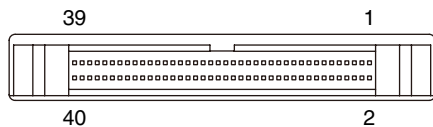
Stripped length: 7mm



PIN NO.	COLOR	ID	FUNCTION
1	Red	V+	Communication/power supply (+)
2	White	CAN_H	Network data High
3	–	Drain	Shield
4	Blue	CAN_L	Network data Low
5	Black	V-	Communication/power supply (-)

### • Input Terminal Assignment

Applicable connector: XG4M-4030 (Omron)



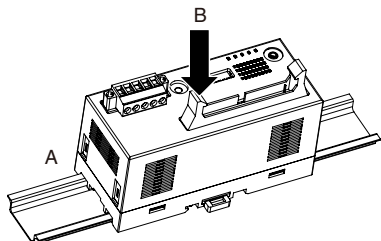
PIN No.	ID	FUNCTION	PIN No.	ID	FUNCTION
1	VS+	Exc. supply+	2	VS+	Exc. supply+
3	VS-	Exc. supply-	4	VS-	Exc. supply-
5	X31	Input 31	6	X23	Input 23
7	X30	Input 30	8	X22	Input 22
9	X29	Input 29	10	X21	Input 21
11	X28	Input 28	12	X20	Input 20
13	X27	Input 27	14	X19	Input 19
15	X26	Input 26	16	X18	Input 18
17	X25	Input 25	18	X17	Input 17
19	X24	Input 24	20	X16	Input 16
21	VS+	Exc. supply+	22	VS+	Exc. supply+
23	VS-	Exc. supply-	24	VS-	Exc. supply-
25	X15	Input 15	26	X7	Input 7
27	X14	Input 14	28	X6	Input 6
29	X13	Input 13	30	X5	Input 5
31	X12	Input 12	32	X4	Input 4
33	X11	Input 11	34	X3	Input 3
35	X10	Input 10	36	X2	Input 2
37	X9	Input 9	38	X1	Input 1
39	X8	Input 8	40	X0	Input 0

## MOUNTING INSTRUCTIONS

### ■ DIN RAIL MOUNTING (PARALLEL)

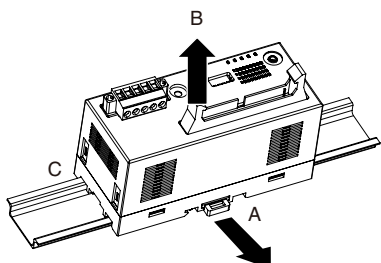
#### • Mounting

- 1) Set the upper hook at the rear side of the unit on the DIN rail.
- 2) Push the lower part in.



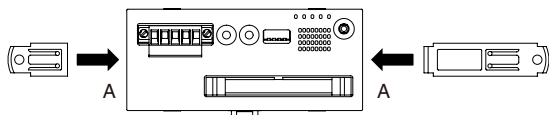
#### • Dismounting

- 1) Push down the DIN rail mounter slider with the tip of a flat-blade screwdriver.
- 2) Pull the lower part of the unit.
- 3) Remove the upper hook of the unit from the DIN rail.

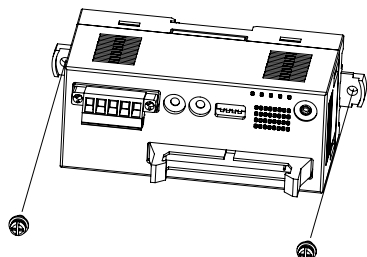


### ■ SURFACE MOUNTING

- 1) Insert the two DIN rail mounter sliders until it clicks once, as shown below.



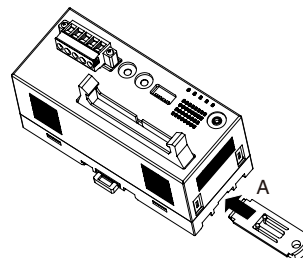
- 2) Mount the unit with M4 screws referring to the External Dimensions. (Torque: 1.4 N·m)



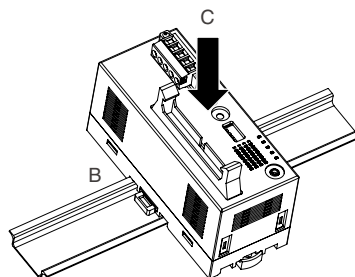
### ■ DIN RAIL MOUNTING (RIGHT ANGLE)

#### • Mounting

- 1) Insert the longer DIN rail mounter slider until it clicks twice, as shown below.

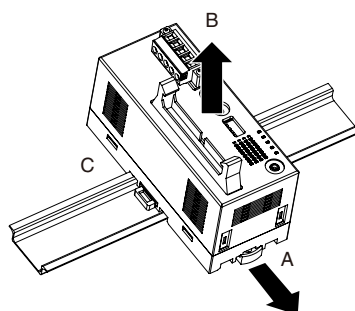


- 2) Set the upper hook at the rear side of the unit on the DIN rail.
- 3) Push the lower part in.



#### • Dismounting

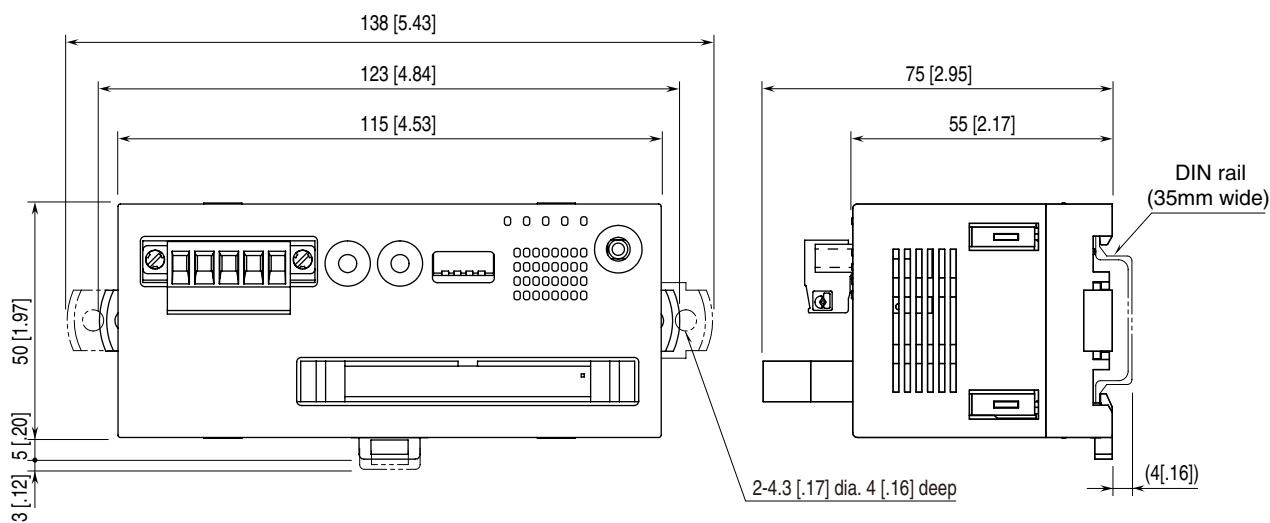
- 1) Push down the DIN rail mounter slider with the tip of a flat-blade screwdriver.
- 2) Pull the lower part of the unit.
- 3) Remove the upper hook of the unit from the DIN rail.



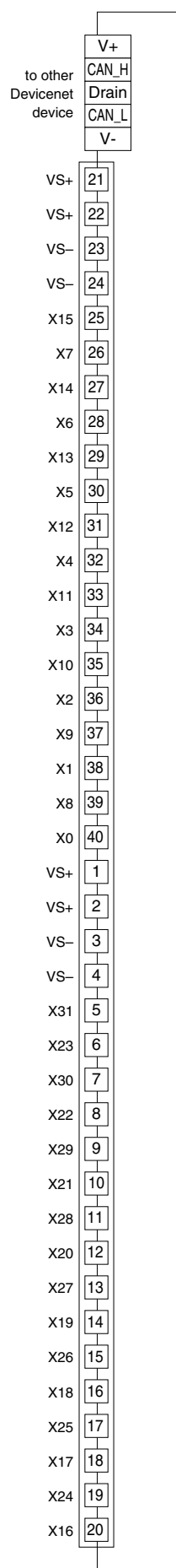
## TERMINAL CONNECTIONS

Connect the unit as in the diagram below.

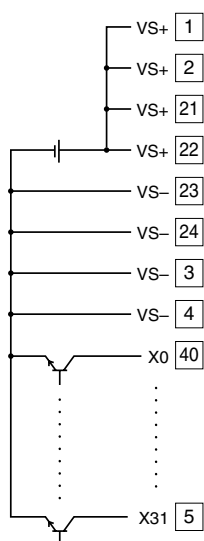
### ■ EXTERNAL DIMENSIONS unit: mm [inch]



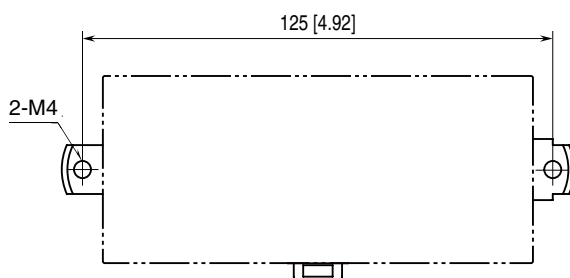
# **CONNECTION DIAGRAM**



## **Input Connection Example**



## MOUNTING REQUIREMENTS unit: mm [inch]



## PC CONFIGURATOR

R7F4HD-DA32A can be monitored with the PC configurator software (model: R7CFG). Refer to the users manual of the software for detailed operations.

## DATA ALLOCATION

'Begin' address is determined by the R7F4HD's node address and the master setting.

### ■ Without Status

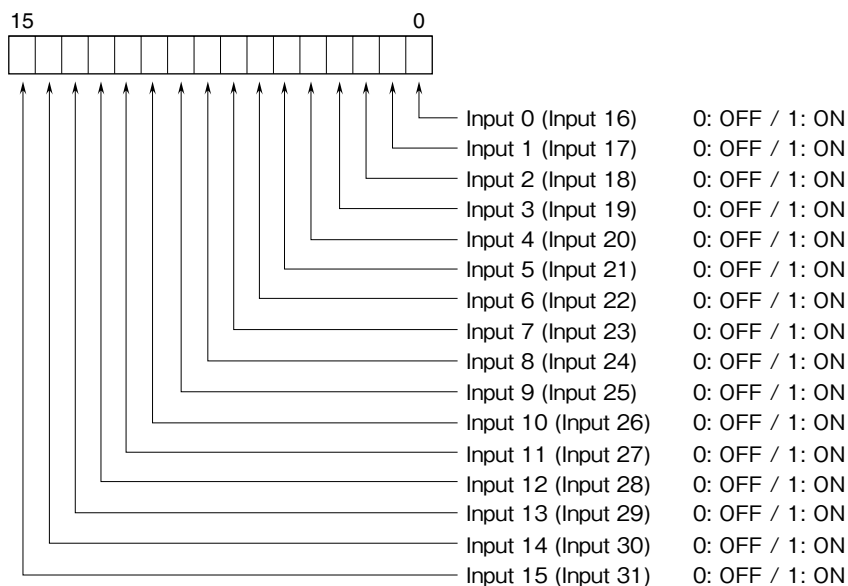
	15	Output data	0	
Begin + 0	R7F4HD-DA32A (x0 - x15)			Input data
+ 1	R7F4HD-DA32A (x16 - x31)			None

### ■ With Status

	15	Output data	0	
Begin + 0	R7F4HD-DA32A (x0 - x15)			Input data
+ 1	R7F4HD-DA32A (x16 - x31)			None
+ 2	Status			

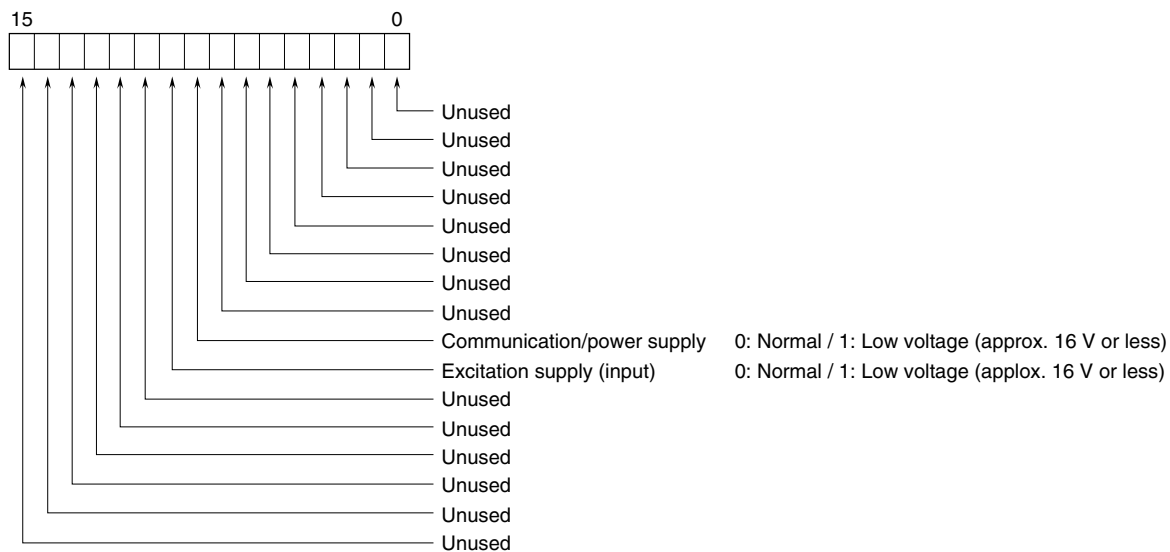
## I/O DATA DESCRIPTION

### ■ INPUT DATA



### ■ STATUS

Bit 8 - 9: Shows the power supply status.





## TRANSMISSION DATA DESCRIPTIONS

### ■ I/O DATA

(Unit: word)

MODEL	OUTPUT DATA* <sup>1</sup> (R7F4HD to master)	INPUT DATA * <sup>2</sup> (Master to R7F4HD)
R7F4HD-DA32A	1	0

### ■ STATUS

Turn SW1-3 to ON to include the status signal in the transmission data.

For details, refer to "STATUS in I/O DATA DESCRIPTIONS"

(Unit: word)

STATUS	OUTPUT DATA* <sup>1</sup> (R7F4HD to master)	INPUT DATA * <sup>2</sup> (Master to R7F4HD)
Enabled	1	0
Disabled	0	0

\*1. Output Data means those sent to the master.

\*2. Input Data means those received from the master.